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Supplementary Material

Recognition of the presence of bone fractures through physicochemical changes in diagenetic bone

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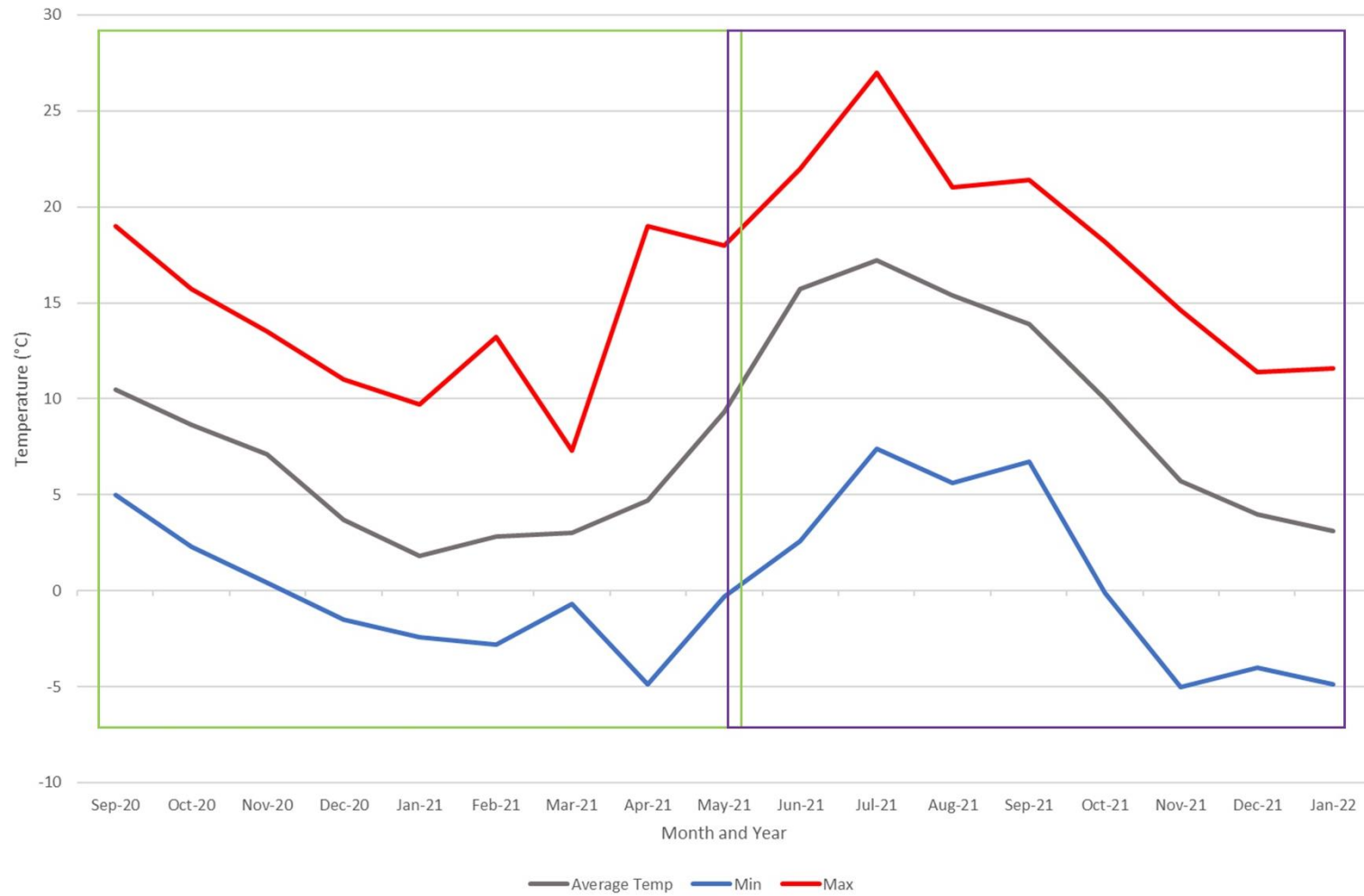


Figure S1 Temperature data for the two studies. The winter study was conducted between September '20 – May '21 (green box), the summer study was conducted between May '21 – Jan '22 (purple box).

Table S3 Complete statistical data of the physicochemical analysis of all samples (perimortem trauma vs postmortem trauma)

	Grouping Variables	Dependent Variable												
		Na	Mg	P	K	Ca	Fe	Zn	Ba	IRSF	API	BPI	BAI	Am/P
Winter	Peri vs post – control samples (n=20)	0.031	0.049	0.028	ns	ns	ns	ns	ns	ns	ns	ns	ns	0.005
	Peri vs post – BFT samples (n=24)	ns	ns	ns	0.001	ns	ns	0.008	ns	ns	ns	ns	Ns	0.038
	Peri vs post – SFT samples (n=24)	0.029	0.001	0.029	ns	0.011	ns	ns	ns	ns	ns	ns	ns	Ns
Summer	Peri vs post – control samples (n=24)	0.015	0.009	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	Peri vs post – BFT samples (n=24)	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns	ns
	Peri vs post – SFT samples (n=25)	0.005	0.001	ns	ns	0.04	ns	ns	ns	ns	0.004	ns	0.025	ns

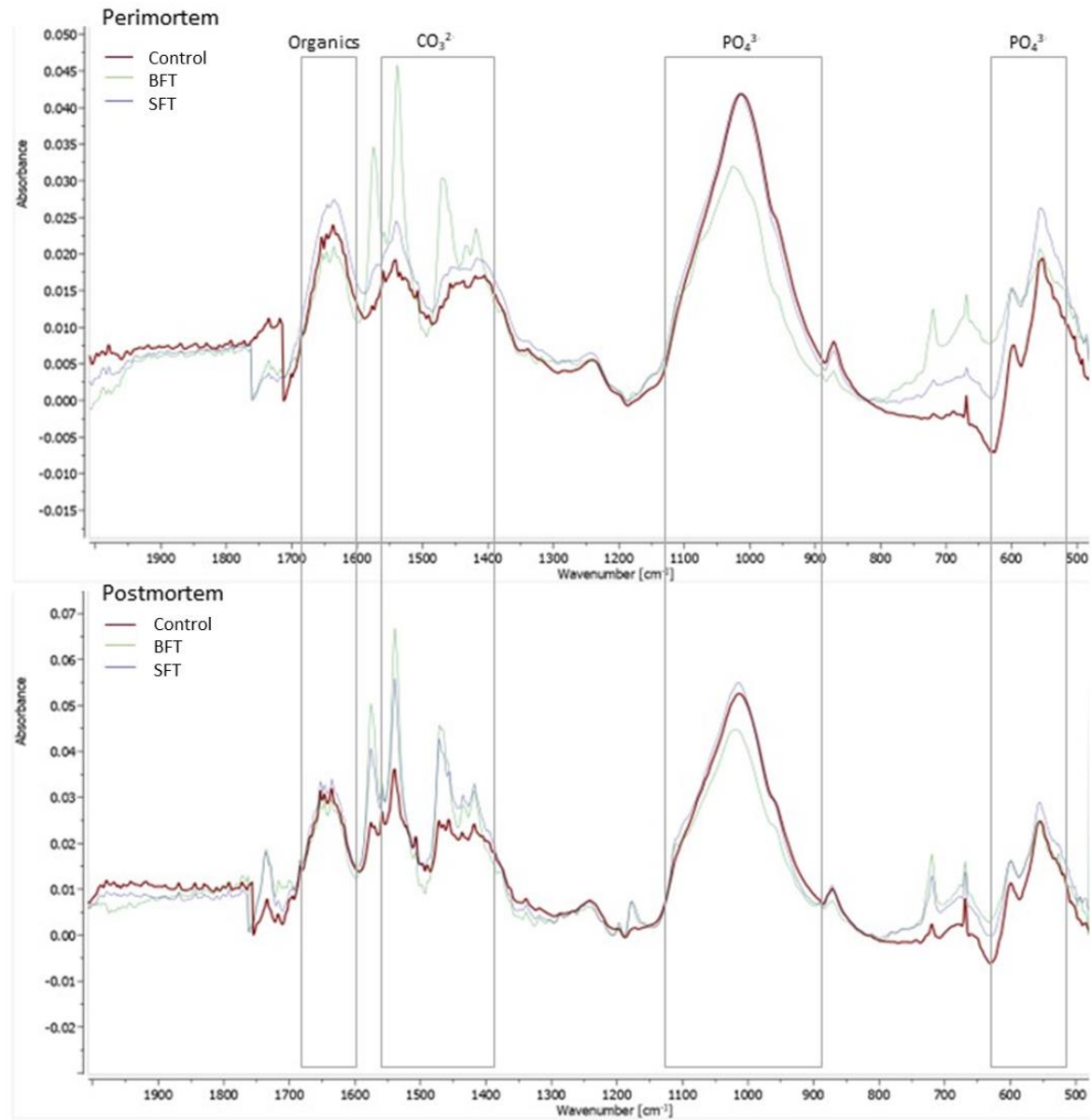


Figure S2 FTIR-ATR sample spectra from the winter study. All spectra were taken at 180 days post-fracture. Peak of interest are highlighted

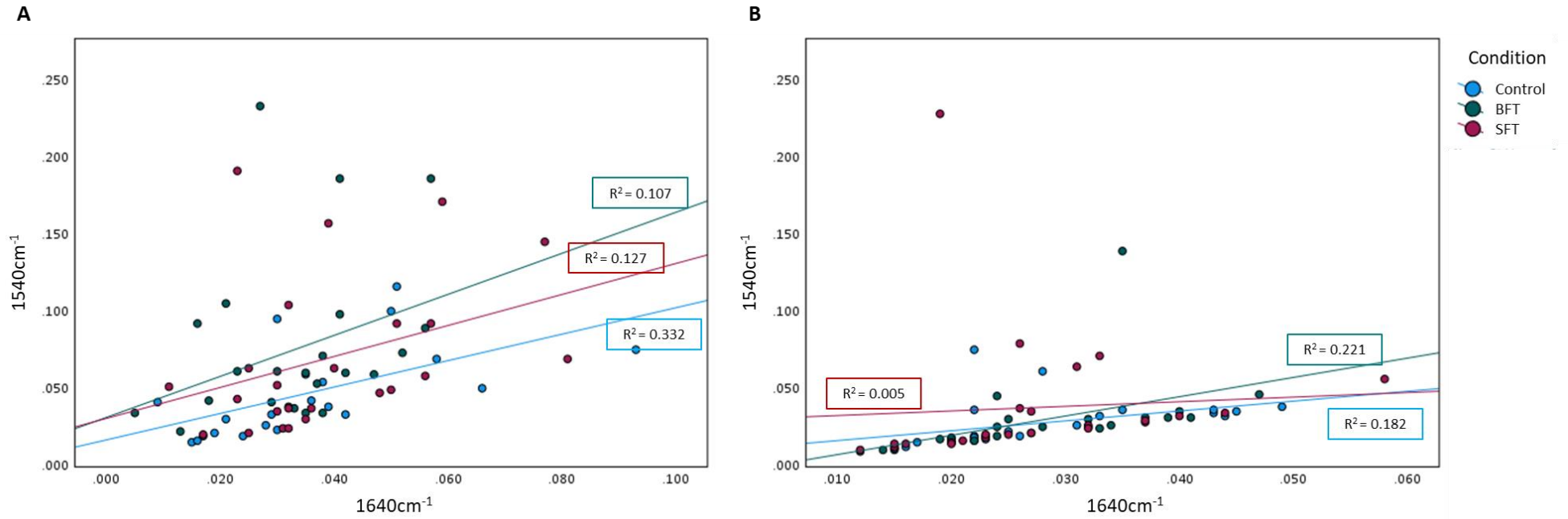


Figure S3 Scatter plots to show the relationship between the absorbance heights at 1540cm⁻¹ and 1640cm⁻¹ for all samples. **A)** Winter study **B)** Summer study